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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,068	09/30/2003	Makoto Tsutsue	60188-664	1409

7590 06/24/2005
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Washington, DC 20005-3096

EXAMINER

PHAM, LONG

ART UNIT PAPER NUMBER

2814

DATE MAILED: 06/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/674,068

Applicant(s)

TSUTSUE ET AL.

Examiner

Long Pham

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 11-27 is/are pending in the application.
- 4a) Of the above claim(s) 1-5 and 11-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 20-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 3 IDS.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 20-27 in the reply filed on 05/20/05 is acknowledged.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 20-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward et al. (publication 2001-223339) in combination with Akiyama (US publication 2003/0057558).

With respect to claim 20, Ward et al. teach a semiconductor device comprising (see figs. 1-5 and the English abstract):

a substrate;

a first insulating film 120 formed on the substrate;

at least two lower wires (both sides of 164), and a lower electrode formed in the insulating film;

an upper electrode 168 and a second upper wire formed on the first insulating film, and

a capacitive insulating film 166 formed between the lower electrode and the upper electrode, the second upper wire is electrically connected to the lower wires.

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Ward et al. fail to teach forming a first upper wire that is electrically connected to the lower wire on the upper electrode.

Akiyama teaches a mim capacitor in which a upper wire 20 that is electrically connected to the lower wire 14a is formed on an upper electrode 16 of the capacitor. See fig. 4 and associated text.

It would have been obvious to one of ordinary skill in the art of making semiconductor devices incorporate the teaching of Akiyama into the device of Ward et al. to overcome problems as recited in [0009], [0010], and [0011] of Akiyama.

Further with respect to claim 20, Ward et al. fail to teach connecting the second upper wire to a pad.

However, the connection between a pad and a wire is well-known in the art.

With respect to claim 21, the formation of a protective layer of insulating material on a wire is well-known in the art.

With respect to claim 22, the formation of wires separated by an insulator is well-known.

With respect to claim 23, Ward et al. further teach the capacitive insulating film 166 is a part of a third insulating film and the second upper wire is connected to the lower wire through the third insulating film.

Further with respect to claim 23, Ward et al. in combination with Akiyama teach the first upper wire connected to the lower wire through the third insulating film.

With respect to claim 24, Ward et al. further teach the capacitive insulating film is made of SiN.

With respect to claim 25, the formation of wire and electrode of the same conductive material is well-known.

With respect to claim 26, the formation of wires of the same conductive material is well-known.

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With respect to claim 27, the use of Cu as electrode material is well-known.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Long Pham whose telephone number is 571-272-1714. The examiner can normally be reached on M-F, 7:30AM-3:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy can be reached on 571-272-1705. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Long Pham

Primary Examiner

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LP